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10/626,376	07/24/2003	Robert S. Greeff	57226-A-RE	2506

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EXAMINER

HO, THOMAS Y

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/626,376

Applicant(s)

GREEFF, ROBERT S.

Examiner

Thomas Y Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 5 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-15 and 17-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Status of Claims*

Claims 1-21 are currently pending. No claims have been withdrawn or cancelled.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 6-8, 10-11, 13-14, 17-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham in Gram 1 Faceting Designs (Montana Burst).**

As to claim 6, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle P2, a crown C1/C2/C3/T above said girdle and a pavilion P1/P3/P4 below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table T, said table having four sides and four cut corners (the octagonal table has cut corners; the use of the phrase “cut corners” does not inherently imply any length relationship between the sides, but rather, only requires that a corner is cut), said table sides being substantially parallel with the girdle, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four corners defined by rib lines extending from the girdle to the cutlet, said rib lines extending in a straight line from the girdle to the cutlet when viewed from the bottom of the pavilion, wherein each pavilion side comprises at least three facets P1/P3/P3/P4 each having a facet corner intersecting at a common facet intersection point.

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As to claim 7, Graham discloses, a cut cornered mixed cut gemstone comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table, said table having four sides and four cut corners, said table sides being substantially parallel with the girdle, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides defined by rib lines extending from the girdle to the culet, said rib lines extending in a straight line from the girdle to the culet when viewed from the bottom of the pavilion, wherein each pavilion side comprises a plurality of facets each having a facet corner intersecting at a common facet intersection point, wherein the plurality of facets on each pavilion side is at least four.

As to claim 8, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides defined by rib lines extending from the girdle to the culet and two pairs of opposing pavilion corners, wherein each pavilion side and corner comprises a plurality of facets, and wherein each pavilion side and corner has only two facets P3/P4 along each rib line.

As to claim 10, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle defined by girdle lines, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides, four crown corners, said crown also comprising at least two steps, including a first step from the girdle to a

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crown break, and a second step from the crown break to a table break, each crown corner having a facet defined by a facet line common with a girdle line, said crown also having a substantially flat table, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight rib lines extending from the girdle to the culet, wherein facet intersection lines in the pavilion define where two facets have a common side, said pavilion being devoid of any facet intersection lines parallel with the girdle.

As to claim 11, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four corners defined by rib lines extending from the girdle to the culet, wherein each pavilion side and corner comprises a plurality of facets each having a facet corner intersecting at a common facet intersection point inwardly of said rib lines, and wherein each pavilion side and corner has a facet P4 with a facet corner at the culet.

As to claim 13, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table having four sides and four corners, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides defined by distinct rib lines extending from the girdle to the culet, wherein each

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pavilion side comprises a plurality of facets each having a facet corner intersecting at a common facet intersection point and each pavilion facet having no more than four sides, and wherein each pavilion side has a facet with a facet corner at the culet.

As to claim 14, Graham discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight corners rib lines extending in a straight line from the girdle to the culet when viewed from the bottom of the pavilion, wherein each pavilion side and corner comprises a plurality of facets, and wherein each pavilion side and corner has only two facets along each rib line, and one facet P1 along the girdle.

As to claim 17, Graham discloses, wherein each pavilion side has four facets each having a facet corner intersecting at a common intersection point.

As to claim 18, Graham discloses, wherein the number of facets on each pavilion corner is at least four.

As to claim 20, Graham discloses, wherein the facet in each pavilion side, which has a facet corner at the culet, has four sides.

**Claims 3, 6, 9, 12-13 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mauer in The Octo-Square Brilliant.**

As to claim 3, Mauer discloses, a cut cornered mixed cut gemstone comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and

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length formed by two pairs of opposing crown sides and four crown corners, each crown side and corner having a length along the girdle, said corner length being substantially less than said side length, said crown also comprising at least two steps, including a first step from the girdle to a crown break and a second step from the crown break to a table break, said crown break defined by lines parallel with said girdles said crown also having a substantially flat table (the table of Mauer is almost totally flat except for small side and corner facets), said table having one facet having four sides and four corners defined by lines parallel with said girdle, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight rib lines extending from the girdle to the culet, wherein each rib line extends in a substantially straight line when viewed from the bottom of the pavilion, wherein the pavilion sides and corners each comprise a plurality of facets.

As to claim 6, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table (the table of Mauer is almost totally flat except for small side and corner facets), said table having four sides and four cut corners, said table sides being substantially parallel with the girdle, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four corners defined by rib lines extending from the girdle to the cutlet, said rib lines extending in a straight line from the girdle to the cutlet when viewed from the bottom of the pavilion, wherein each

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pavilion side comprises at least three facets each having a facet corner intersecting at a common facet intersection point.

As to claim 9, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle defined by girdle lines, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and four crown corners, wherein each crown side intersects with its adjacent corners at about the same angle of intersection, said crown also comprising at least two steps, including a first step from the girdle to a crown break, and a second step from the crown break to a table break, said crown also having a substantially flat table, said table having one facet having four sides and four corners defined by lines parallel to said girdle lines, and wherein all of the steps in each side of the crown have the same facet corner angles, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight distinct rib lines extending from the girdle entirely to the culet, said pavilion sides and corners extending entirely to the culet.

As to claim 12, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table having four sides and four cut corners; said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides defined by distinct rib lines extending from the girdle to the culet, wherein each rib line extends in a substantially straight line when viewed from the bottom of the pavilion,



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wherein each pavilion side comprises a plurality of facets each and every one of said plurality having a facet corner intersecting at a common facet intersection point, wherein one of the facets in the pavilion side is a girdle star facet extending downwardly from the girdle, which girdle star facet has only three sides.

As to claim 13, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and a substantially flat table having four sides and four corners, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides defined by distinct rib lines extending from the girdle to the culet, wherein each pavilion side comprises a plurality of facets each having a facet corner intersecting at a common facet intersection point and each pavilion facet having no more than four sides, and wherein each pavilion side has a facet with a facet corner at the culet.

As to claim 21, Mauer discloses, a cut cornered mixed cut gemstone comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and four crown corners, each crown side and corner having a length along the girdle, said corner length being substantially less than said side length, said crown also comprising at least two steps, including a first step from the girdle to a crown break, and a second step from the crown break to a table break, said crown break defined by lines parallel with said girdle, said crown also having a substantially flat table, said table having one facet having four sides and four corners defined by lines parallel with said girdle, wherein all of the steps in each side of the crown are defined by straight lines from the

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girdle to the table, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight rib lines extending from the girdle to the culet wherein each rib line extends in a substantially straight line when viewed from the bottom of the pavilion.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mauer in view of case law.**

As to claim 1, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and four crown corners, each crown side and corner having a length along the girdle, said corner length being substantially less than said side length, said crown also comprising at least two steps, including a first step from the girdle to a crown break, and a second step from the crown break to a table break, said crown break defined by lines parallel with said girdle, said crown also having a substantially flat table, said table having one facet having four sides and four corners defined by lines parallel with said girdle, said table corner length being less than said table side length, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the pavilion, said

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pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight rib lines extending from the girdle to the culet, wherein each rib line extends in a substantially straight line when viewed from the bottom of the pavilion.

The difference between the claim and Mauer is the claim recites: substantially less. The table in Mauer has corner lengths that are less than the side lengths. It could be argued that the difference between the lengths is not "substantial". However, it has been held that the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ 402 (CCPA 1961). It would have been obvious to one of ordinary skill in the art, having the disclosures of Mauer and case law before him at the time the invention was made, to modify the proportions of the lengths of Mauer, because it is within the skill of the art.

As to claim 2, Mauer discloses, wherein the rib lines extend substantially continuously from the girdle to the culet.

As to claim 15, Mauer discloses, a cut cornered mixed cut gemstone, comprising a girdle, a crown above said girdle and a pavilion below said girdle, said crown comprising a width and length formed by two pairs of opposing crown sides and four crown corners, each crown side and corner having a length along the girdle, said corner length being substantially less than said side length, said crown also comprising at least two steps, including a first step from the girdle to a crown break, and a second step from the crown break to a table break, said crown also having a substantially flat table, said table having one facet having four sides and four corners defined by lines parallel with said girdle, said table corners being less than said table sides, said pavilion having a bottom and comprising a substantially centrally located culet at the bottom of the

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pavilion, said pavilion also comprising two pairs of opposing pavilion sides and four pavilion corners defined by eight rib lines extending from the girdle to the culet, said pavilion sides and corners extending entirely to the culet.

Case law teaches: substantially less.

**Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of case law.**

As to claim 19, the difference between the claim and Graham is the claim recites, wherein the common facet intersection point is about  $\frac{3}{4}$  of the way from the culet to the girdle.

Graham may or may not disclose the exact proportions, however, it has been held that the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ 402 (CCPA 1961). It would have been obvious to one of ordinary skill in the art, having the disclosures of Graham and case law before him at the time the invention was made, to modify the proportions of Graham, because it is within the skill of the art.

#### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 4-5 and 16 are allowable; the reasons for allowance were given in the previous office action mailed on 6/9/04.

#### ***Response to Arguments***

Applicant's arguments filed 9/14/04 have been fully considered but they are not persuasive.

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As to claim 1, the Applicant argues that in the Octo-Square Brilliant, the table corner lengths are not substantially less than the table side lengths. The Examiner respectfully disagrees. A visual comparison between the lengths indicates that the corner lengths are less than the table side lengths in the Octo-Square Brilliant. Furthermore, case law has been provided in regards to the obviousness of changing the discloses proportions.

As to claim 21, the Applicant argues that in the Octo-Square Brilliant, the top facet in each side is not defined by the same straight lines from the girdle as the first two steps. The Examiner respectfully disagrees. The steps in the crown sides are defined by straight lines from the girdle to the table. Claim 21 recites two steps, one from the girdle to the crown break, and another step from the crown break to the table break. It is clear from observing the figures in the Octo-Square Brilliant, that the lines that define the two steps are straight from the girdle to the table. At the table, the lines may not be straight, but that is not what is being claimed. As long as the steps are defined by straight lines (as opposed to the steps and the table), the Octo-Square Brilliant reads on the claim.

As to claim 3, the Applicant argues that in the Octo-Square Brilliant, not all of the rib lines extend in a substantially straight line, and one would take a turn of about 45 degrees as one travels from the girdle to the culet. The Examiner respectfully disagrees. The Octo-Square Brilliant discloses 8 rib lines extending from the culet to the girdle, and four rib lines extending from the culet to a points intermediate the culet and girdle (wherein the lines split, and then travel towards the girdle). The view of the pavilion shows that the eight rib lines, which meet at the girdle, and are paired to form a "V" shape with the vertex of the "V" at the girdle, do meet

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the claimed limitations. The other four lines, pointing north, south, east and west, must bend before reaching the girdle, but these are NOT the lines relied upon for the rejection.

As to claim 9, the Applicant argues that in the Octo-Square Brilliant, the top facet in each side has different facet corner angles than the facet corner angles in the first two steps. The Examiner agrees with this characterization, but disagrees with the assertion that the Octo-Square Brilliant does not read on claim 9. Claim 9 only requires that each of the steps in each side of the crown have the same facet corner angle. There are two steps in the Octo-Square Brilliant, and each of these steps in each side of the crown have the same facet corner angle. The facet corner angles of the TABLE in the Octo-Square Brilliant may not be the same, but this is not relied upon to make the rejection. As long as the steps in the Octo-Square Brilliant have the same facet corner angle, then the Octo-Square Brilliant reads on claim 9.

As to claim 10, the Applicant argues that in the Octo-Square Brilliant, there are two short facet lines on the pavilion which cross the culet, each of which appear to be parallel to the girdle. The Examiner agrees. The rejection of claim 10 under Mauer and the Octo-Square Brilliant has been withdrawn, and a new rejection has been made using another reference.

As to the Montana Burst reference, the Applicant argues that the reference may not be prior art. The Examiner respectfully disagrees. The Montana Burst reference is a page from a book, compiled and sold by Graham, and the book has a copyright date of 1995. Further evidence is presented that shows that the Gram 1 book was on sale to the public by May 1997, more than one year before the Applicant's filing date (see world wide web ultratec-facet.com/Sometimes/stmay97.htm). Applicant then argues that the Montana Burst is not a "cut cornered" stone. The Examiner respectfully disagrees. The GIA diamond dictionary defines a

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cut-cornered triangle cut as one with "corners removed". The octagon is a square with corners removed. The term "cut cornered" in of itself has no relationship with the length of the corners and sides.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

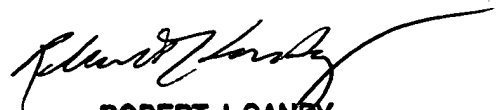
ultra-tec.com website disclosing that the Gram 1 faceting design book was on sale by May of 1997.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Y Ho whose telephone number is (703)305-4556. The examiner can normally be reached on M-F 10:00AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J Swann can be reached on (703)306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYH

  
ROBERT J. SANDY  
PRIMARY EXAMINER